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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,328	08/31/2001	Brig Barnum Elliott	00-4069	1878
28120	7590	11/17/2006	EXAMINER	
			JACKSON, JENISE E	
		ART UNIT		PAPER NUMBER
				2131

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/944,328	ELLIOTT, BRIG BARNUM
	Examiner	Art Unit
	Jenise E. Jackson	2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 August 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-33 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

10/30/06

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20061026

- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-33 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific asserted utility or a well established utility. Claims 1-33 are directed to “a method of securely transmitting light information”. The claims are rejected under 101 for being non-statutory as not being useful. Claims 1-33, more specifically independent claims 1, 17, 19, and 33 “measure a quantum state of light pulses”, performing measurement of light is not useful under 101.
3. Claims 1-33 also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention. Claims 1-33 are rejected under 112 1st for lack of usefulness, because the claims are directed to “securely transmitting light and measuring a quantum state of the light pulses”. These limitations are rejected under 112 for lack of usefulness, and do not result in a tangible result. Claims 1-33 are required to provide a tangible and useful result. The Examiner suggest that the Applicant amends claims to provide a tangible and useful result. An example, of a tangible result, is “using the light pulses as a key to encrypt and decrypt data”.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 19-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, claim 19 states “wherein the electrical controller is configured to receive at least one setup message from which the controller determines **how to control** the at least one of the switching devices”. Claim 19 should be amended to state, “wherein the electrical controller orients the plurality of switching devices to direct optical energy along the path, **based on the received at least one setup message**”.

Allowable Subject Matter

5. Claims 1-33 contain allowable subject matter, for the following reasons listed below:

6. Regarding claims 1 and 17, the closest prior arts of record, namely Chang et al. and Rarity et al, does not disclose, “setup messages are used to configure a path for the transmission of light pulses having randomly selected quantum bases”, measuring a quantum state using a second set of randomly selected quantum bases”.

7. Regarding claim 19, the closest prior arts of record, namely Chang et al and Rarity et al, does not disclose, “wherein the electrical controller is configured to receive at least one setup message from which the controller determines how to control the at least one of the switching devices”.

8. Regarding claim 33, the closest prior arts of record, namely Chang et al and Rarity et al does not disclose, “prior to receipt of the quantum cryptographic light pulses, receive at least one

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setup message for configuring the directing means, and for causing the orienting means to orient the directing means in accordance with the setup message into an orientation that directs the quantum cryptographic light pulses”.

9. An example of prior art that does not teach or suggest the limitations above is Chang. Chang et al. discloses a label-switched routing look-up tables are included in network elements in order to rapidly route the optical packet thorough the network element whenever a flow switching state is not set-up. The possible connection look up table is also configured to already provide an alternate wavelength assignment or alternate path to route the signal. Chang discloses label-switched routing look-up tables and advantages of assigning alternative wavelengths or paths to optical communications when the messages are being routed. Chang fails to disclose or suggest quantum states or measuring such states using a second set of randomly selected quantum bases.

10. Claims 1-33 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

11. Claims 1-33 would be allowable if the Applicant rewrites or amends to overcome the 101 rejection set forth in this Office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenise E. Jackson whose telephone number is (571) 272-3791. The examiner can normally be reached on M-Th (6:00 a.m. - 3:30 p.m.) alternate Friday's.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



October 26, 2006

Tariq J. Aram
Primary Examiner
Tariq J. Aram
10/30/06